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STRENGTHENING SANTRI'S ARABIC LITERACY THROUGH DIGITAL TRANSLATION TRAINING AT AL-JUNAIDIYAH BIRU ISLAMIC BOARDING SCHOOL

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ABSTRACT
The use of digital translation technology in Islamic boarding schools requires guidance to help santri understand Arabic texts in context and assess the accuracy of machine-generated translations. This community service program aimed to strengthen santri's Arabic literacy through digital translation training and mentoring at Al-Junaidiyah Biru Islamic Boarding School, Bone Regency, Indonesia. The program adopted an Asset-Based Community Development (ABCD) approach, encompassing asset identification, shared vision building, program design, implementation, and sustainability planning. Existing assets included santri's foundational Arabic skills, teachers' expertise, established traditions of studying classical Islamic texts, learning communities, computer facilities, and internet access. Activities involved introducing digital translation tools, translating Islamic texts, examining vocabulary and sentence structures, and collaboratively editing machine-generated translations. Evaluation drew on observations, interviews, and reviews of santri's work. The findings indicated that santri began to use digital translation tools to support text comprehension, identify inaccurate renderings of Islamic terminology, and revise translations with teacher guidance. The activities also facilitated collaborative learning and encouraged critical engagement with machine translation output. Digital translation training can support Arabic literacy development in Islamic boarding schools when accompanied by linguistic guidance and contextual verification of meaning. Sustaining the program requires continued teacher involvement and the integration of translation practice into santri learning communities.

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INTRODUCTION

Arabic literacy is an important foundation for santri's engagement with Islamic knowledge in pesantren, or Islamic boarding schools. Through Arabic, santri access religious texts, examine scholarly explanations, and develop their understanding of Islamic teachings. The study of *kitab kuning*, or classical Islamic texts, provides a meaningful setting in which linguistic knowledge is connected to religious interpretation. Arif et al. (2023), in their systematic review of methods for teaching *kitab kuning* reading, situate this learning tradition within continuing discussions about instructional development in pesantren. In the present community service program, Arabic literacy encompasses understanding vocabulary and sentence structures, interpreting meanings in context, and explaining the content of selected Islamic texts in accessible language.

The availability of digital resources introduces additional possibilities for supporting these literacy practices. Online dictionaries and machine translation applications can be incorporated into activities that require learners to explore meanings and compare alternative interpretations. However, access to digital tools needs to be accompanied by the ability to evaluate and use information appropriately. Tinmaz et al. (2022) describe digital literacy as a broad field involving interconnected competencies, skills, and forms of digital thinking. Applied to Arabic learning, this perspective suggests that training should develop both operational skills and the capacity to assess whether digitally generated information is suitable for a particular text and learning purpose.

Machine translation offers a relevant starting point for connecting language learning with critical digital practices. Lee's (2023) systematic review and meta-analysis of 87 studies reported generally positive findings regarding machine translation in foreign language education, particularly in writing. The review also identified differences between teachers' and students' perceptions of its use. These findings provide a rationale for exploring guided translation activities, although they do not establish that similar outcomes will necessarily occur in Arabic learning at pesantren. In this setting, the educational value of translation technology needs to be examined through the tasks learners perform, the guidance they receive, and the ways they revise and explain their work.

An important consideration is therefore the development of machine translation literacy. Bowker and Buitrago Ciro (2019) present this literacy as an

area requiring explicit instruction, including an understanding of translation systems and the editing of machine-generated output. Although their discussion focuses on scholarly communication, the instructional principle is relevant to the design of this program: learners need opportunities to examine translations and make informed decisions about their use. Accordingly, digital translation training can include comparing source and target texts, consulting dictionaries, discussing alternative equivalents, and explaining revisions. These activities position translation output as material for analysis within a guided learning process.

For the present program, particular attention is given to the contextual interpretation of Islamic terminology. Selected texts concerning worship, moral conduct, and everyday religious life provide opportunities for santri to examine how word choice relates to the subject and purpose of a passage. For example, a translation exercise can ask participants to compare a suggested equivalent with the explanation provided in their learning materials and then justify their final choice. Teacher involvement is essential to this proposed learning process because the interpretation of religious content requires attention to both language and subject knowledge. Where generative AI tools are introduced, their use should also follow a pedagogical approach that preserves learners' judgment and teachers' responsibility. This is consistent with Miao and Holmes's (2023) guidance on human agency and the educational validation of generative AI.

The community mapping described in this program identified several resources at Al-Junaidiyah Biru Islamic Boarding School, Bone Regency, that could support such activities. These included santri's foundational knowledge of Arabic grammar, teachers' experience in explaining classical Islamic texts, established traditions of collective learning, and access to computer facilities and the internet. Interviews and observations reported in the program documentation also indicated institutional support for incorporating technology into language learning. Together, these resources provided a basis for designing training connected to the pesantren's existing educational practices.

The practical need identified in the program was to connect these available resources through structured digital translation activities. Foundational Arabic knowledge and access to technology created opportunities for training, but their educational use required clear tasks, guided practice, and collaborative review.

The program therefore focused on helping santri use translation tools, examine vocabulary and sentence structures, identify possible inaccuracies, and revise translations with teacher assistance. This focus also provided a concrete role for the pesantren's learning community, in which participants could discuss translation choices and learn from one another's explanations.

An Asset-Based Community Development (ABCD) approach was selected to organize this collaboration. Kretzmann and McKnight (1993) emphasize the identification and mobilization of individual capacities, local associations, and institutional resources in community development. In this program, that principle informed the involvement of santri, teachers, and pesantren managers in identifying available strengths and planning relevant activities. The approach provided a basis for building on existing linguistic knowledge, learning relationships, and facilities, while encouraging participants to contribute to the implementation and continuation of the program.

The contribution of this community service program lies in connecting Arabic literacy practice, critical engagement with digital translation, and the mobilization of pesantren assets. Its purpose is to address a practical learning need through activities that participants and teachers can continue within their own setting. Accordingly, the program aimed to strengthen santri's Arabic literacy through digital translation training and mentoring at Al-Junaidiyah Biru Islamic Boarding School. Specifically, it sought to support the contextual understanding of selected Islamic texts, develop skills in reviewing and revising machine-generated translations, and encourage collaborative learning through the active involvement of santri and teachers.

METHOD

Approach and Setting

This community service program employed an Asset-Based Community Development (ABCD) approach to strengthen santri's Arabic literacy through digital translation training and mentoring. Drawing on the asset-oriented principles of Kretzmann and McKnight (1993), the program mobilized existing individual capacities, community relationships, learning traditions, and institutional resources. Santri, teachers, and pesantren representatives

participated in identifying available assets, establishing priorities, and implementing the activities.

The program was conducted at Al-Junaidiyah Biru Islamic Boarding School, Bone Regency, South Sulawesi, Indonesia. It involved 34 participants: one pesantren leader, five Arabic and English teachers, five pesantren administrators, and 23 santri active in the language community. Santri were the primary beneficiaries of the training, while teachers, administrators, and the pesantren leader supported program planning, implementation, and sustainability.

The overall program lasted six months, encompassing preparation, asset mapping, collaborative planning, training, mentoring, evaluation, and follow-up planning. Core training and mentoring activities were delivered in several sessions with a cumulative duration of five weeks within the six-month implementation period.

Implementation Stages

The program was organized into five operational stages: asset identification, shared vision building, program design, implementation and mentoring, and evaluation and sustainability planning.

1. Asset Identification

The initial stage identified resources that could support Arabic literacy development and digital translation practice. Information was collected through observations, interviews, and group discussions involving santri, teachers, and pesantren representatives. Asset mapping covered five categories: individual, social, cultural, physical, and institutional assets. Individual assets included santri's foundational Arabic knowledge and teachers' linguistic expertise. Social assets included learning communities and peer networks. Cultural assets comprised the study of classical Islamic texts and established language practices. Physical assets included computer facilities and internet access, while institutional assets included leadership support and opportunities to incorporate activities into pesantren learning routines. The mapping informed the selection of activities, learning materials, and forms of assistance appropriate to participants' existing capacities.

2. Shared Vision Building

Group discussions were conducted to establish shared priorities for the program. Santri described their learning experiences and difficulties, teachers identified relevant instructional needs, and pesantren representatives considered available resources and implementation arrangements. These discussions established a shared direction for strengthening Arabic literacy through guided digital translation activities. Participants also discussed the importance of understanding texts in context, reviewing machine-generated translations, and maintaining teacher involvement in the interpretation of Islamic terminology. The agreed priorities guided the design of the training and mentoring activities.

3. Program Design

The community service team collaborated with pesantren teachers to prepare training materials and translation exercises. The materials addressed the use of digital translation tools, vocabulary analysis, sentence structure, contextual interpretation, and the revision of machine-generated translations. Selected Islamic texts provided material for guided translation practice. Texts and exercises were adjusted to santri's foundational Arabic knowledge and the pesantren learning context. Activities were designed to connect digital tool use with linguistic analysis, allowing participants to examine translation output rather than accept it without review. The learning sequence included examining the source text, obtaining an initial translation, identifying expressions requiring verification, consulting supporting resources, discussing alternative equivalents, and revising the translation with peer and teacher assistance.

4. Training and Mentoring

Core activities were implemented through demonstrations, guided exercises, small-group translation tasks, and collaborative review. These activities were conducted in several sessions with a cumulative duration of five weeks. Facilitators demonstrated how to use digital translation tools and compare their output with the Arabic source text. Santri then practiced translating selected passages, identifying unfamiliar vocabulary, examining grammatical relationships, and discussing the contextual appropriateness of suggested equivalents. Teachers and the community service team provided feedback on

vocabulary choices, sentence interpretation, and Islamic terminology. Santri revised their translations following discussion and feedback. Collaborative activities encouraged participants to explain their choices, consider alternative interpretations, and contribute to the review of their peers' work.

5. Evaluation and Sustainability Planning

Evaluation was conducted throughout the program and at the conclusion of the core activities. Formative evaluation involved observing participation, reviewing translation exercises, and providing feedback during mentoring. A pretest was administered before the core training, and a posttest was administered after its completion to assess participants' Arabic literacy in relation to the translation activities. Final discussions with santri, teachers, and pesantren representatives addressed learning experiences, implementation challenges, and follow-up needs. Sustainability planning focused on opportunities to continue teacher-guided translation practice through existing learning communities and pesantren activities. Proposed follow-up activities were distinguished from those already implemented.

Data Collection

Data were collected through observations, interviews, group discussions, pretest and posttest assessments, and documentation of participants' translation work. Observations focused on participation, digital tool use, collaboration, and engagement with feedback. Interviews and group discussions explored participants' experiences, difficulties, and perceptions of the activities. The pretest and posttest provided information on participants' performance before and after the core training. Translation work provided examples of vocabulary selection, contextual interpretation, and revisions made during mentoring. The evaluation focused on Arabic text comprehension, critical use of digital translation tools, and collaborative participation. Text comprehension concerned the interpretation of vocabulary, sentence relationships, and the main message of selected passages. Critical tool use concerned the identification of questionable translations and the checking and revision of suggested equivalents. Collaborative participation concerned engagement in discussion, peer review, and teacher-guided editing.

Data Analysis

Data were analyzed descriptively to explain program implementation and documented learning outcomes. Observation notes, interview accounts, and discussion records were organized according to the implementation stages and evaluation areas. Participants' translation work was reviewed to identify examples of contextual understanding, difficulties, and revisions. Pretest and posttest results were compared descriptively to examine changes in performance following the core training. The comparison was interpreted alongside observations, participant accounts, and translation work. Differences between pretest and posttest performance were treated as evidence of change during the program, with consideration of the limits of an evaluation without a comparison group. Evidence from different sources was compared to assess consistency and provide a contextual account of the program's achievements and remaining needs.

RESULTS AND DISCUSSION

1. Community Assets as the Foundation of the Program

The community service program involved 34 participants, comprising one pesantren leader, five Arabic and English teachers, five administrators, and 23 santri. The overall implementation lasted six months, with core training and mentoring conducted in several sessions totaling five weeks. The results are presented through the identification and mobilization of community assets, collaborative program planning, training activities, documented learning experiences, and sustainability considerations.

Asset mapping identified five interconnected resources at Al-Junaidiyah Biru Islamic Boarding School: individual capacities, social relationships, cultural practices, physical facilities, and institutional support. Interviews with teachers and santri indicated that participants already possessed foundational knowledge of Arabic vocabulary and grammar. This knowledge provided an entry point for examining sentence structures and discussing the meanings of selected texts during translation practice.

The pesantren also had established learning communities and collective activities that could support peer interaction. Its traditions of studying classical Islamic texts, practicing conversation, and delivering speeches provided familiar

settings for connecting language comprehension with communication. Computer facilities and internet access offered opportunities to introduce digital resources, while leadership support enabled teachers and facilitators to organize technology-supported activities.

These findings suggest that the program's initial task was to connect available resources through a shared learning purpose. This interpretation is consistent with the asset-oriented principles of Kretzmann and McKnight (1993), which emphasize individual capacities, local associations, and institutional resources as foundations for community development. In the present setting, teachers' expertise, santri's existing knowledge, and collective learning practices provided complementary contributions to program implementation.

The significance of the pesantren's learning traditions also requires attention. Digital activities were introduced within an environment where Arabic texts already formed part of everyday learning. Arif et al. (2023) examine the continuing development of methods for teaching classical Islamic text reading in pesantren. Their review provides a relevant context for interpreting the present program: the introduction of digital resources can be connected to established reading practices and teachers' explanations. The contribution of technology therefore depends partly on how it is incorporated into existing instructional relationships.

2. Shared Priorities and the Development of Learning Materials

Group discussions established a shared interest in using digital technology to support language learning while maintaining the pesantren's educational values. The program documentation recorded aspirations to strengthen language literacy, develop translation materials, and organize collaborative translation activities. Although the wider discussions included Arabic and English, the analysis presented here focuses on activities relevant to Arabic literacy.

The discussions helped connect participants' expectations with available resources. Teachers contributed knowledge of text difficulty and Islamic terminology, santri contributed their learning experiences, and pesantren representatives supported implementation arrangements. This collaboration provided a basis for selecting materials that were relevant to participants' abilities and learning environment.

The resulting instructional emphasis combined understanding the source text, examining vocabulary and sentence structures, consulting digital resources, and reviewing translation choices. The practical importance of this sequence lies in giving participants a reason to evaluate digital output. A translation task becomes a literacy activity when learners explain meanings, consider alternatives, and justify revisions.

This interpretation draws on Bowker and Buitrago Ciro's (2019) discussion of machine translation literacy, which includes understanding translation systems and editing their output. Their framework concerns scholarly communication, so its application to pesantren requires contextual adaptation. Nevertheless, its emphasis on informed judgment provides a useful basis for organizing guided translation practice.

3. Digital Learning Materials Supporting Arabic Literacy

The visual materials included in the program documentation show the Wordwall platform, activity templates, and examples of Arabic exercises. These materials illustrate a supporting component of the program: the use of interactive resources to present and practice language content. They should be distinguished from the digital translation tools used to generate or review translated texts.



Figure 1. Wordwall interface and activity templates illustrated in the program materials: (a) platform homepage and (b) template selection.

Figure 1 introduces the platform and the activity formats available for preparing language exercises. Its value in this section is to show the instructional environment represented in the materials. A platform interface alone does not demonstrate participant engagement or learning achievement; such claims require observation records, completed activities, or assessment evidence.



Figure 2. Arabic digital learning examples included in the program documentation: (a) an Arabic activity screen and (b) an activity instruction screen.

The examples in Figure 2 illustrate the presentation of Arabic content and instructions within digital learning activities. Their potential contribution to translation training is preparatory: vocabulary recognition and attention to instructions can support subsequent work with sentences and texts. However, familiarity with an exercise interface should be distinguished from the ability to interpret a passage accurately.



Figure 3. A wheel-based activity illustrated in the Arabic learning materials.

The wheel-based format in Figure 3 provides an example of how prompts can be presented through an interactive activity. In a translation-oriented lesson, a similar format could be used to select vocabulary, sentences, or discussion questions. This is an instructional possibility rather than evidence that a particular learning outcome occurred during the program.



Figure 4. Examples of Arabic question-and-answer exercises in the supporting digital materials.

The exercises in Figure 4 illustrate recognition and response tasks involving Arabic expressions and visual prompts. Such tasks can support basic language practice, but interpreting extended Islamic texts requires additional attention to grammatical relationships and contextual meaning.

The relevance of these interactive materials can be discussed alongside Sailer and Homner's (2020) meta-analysis of gamification and learning. Their study examines cognitive, motivational, and behavioral outcomes across different settings. It provides a rationale for considering interactive activity design, but does not establish that the screenshots presented here produced comparable effects. In this program, the figures are best understood as illustrations of learning materials rather than independent evidence of effectiveness.

4. Guided Translation and Collaborative Revision

The implementation account describes translation activities in which santri worked with selected texts under the guidance of teachers and the community service team. Participants produced initial translations, while teachers provided feedback on sentence structures, vocabulary choices, and the contextual appropriateness of Islamic terminology. Collaborative review created opportunities to discuss why a suggested translation needed to be retained, modified, or replaced.

The educational significance of this process lies in the relationship between digital assistance and linguistic reasoning. An initial translation can provide material for discussion, but reviewing its accuracy requires participants to return

to the source text. Teachers' explanations help connect the resulting discussion with participants' existing knowledge of Arabic grammar and religious subject matter.



Figure 5. An example of teacher-guided revision of a digital translation.

A documented example of this kind would provide direct evidence of the program's central activity. It should identify the source passage, the translation issue, the revision, and the reason for the change. Such evidence would allow readers to assess what participants did with digital output and how teacher feedback informed their decisions.

The interpretation of collaborative revision is supported by Bowker's (2021) discussion of machine translation literacy as involving cognitive competencies beyond procedural tool use. From this perspective, knowing how to operate an application is one component of a broader ability to make informed decisions about its output.

A useful comparison is provided by Zhou et al. (2022), whose study of students in international higher education found strategic uses of machine translation alongside critical review. Their participants combined technological assistance with their own linguistic knowledge. Although the institutional and language contexts differ from the present program, the comparison highlights the importance of examining how learners use and revise translations rather than equating access to a tool with learning.

5. Arabic Literacy and Critical Engagement with Translation Output

The original implementation account reports that santri became more attentive to thematic vocabulary, contextual interpretation, and the review of translation results. It also describes participants' use of simple Arabic expressions and their involvement in collaborative learning. These accounts suggest that the

training created opportunities to connect vocabulary knowledge with meaningful language tasks.

However, the reported outcomes should be interpreted at the level supported by the available documentation. Recognition of vocabulary, understanding a passage, revising a translation, and communicating independently in Arabic are related but distinct achievements. Evidence of participation in translation exercises therefore supports an account of learning activity, while broader claims about Arabic proficiency require appropriate assessment results.

Lee's (2023) systematic review and meta-analysis provides a relevant comparison by reporting generally positive findings for machine translation in foreign language education, particularly in writing. Those findings support the pedagogical relevance of guided translation activities, but they do not directly establish improvements in Arabic reading or Islamic communication in this program.

Tsai (2019) also investigated Google Translate within EFL drafting tasks, providing an example of translation technology being examined through specific language activities. The relevance to the present program is methodological: learning claims become clearer when they are tied to defined tasks and observable products. For this program, annotated translations and explanations of revisions would provide stronger evidence than general statements that participants became more digitally literate.

The broader review by Shadiev et al. (2024) places computer-aided translation within research on learning and instruction. This literature helps locate the present program within a wider educational discussion, while its particular contribution concerns the integration of translation practice with pesantren resources and teacher guidance.

6. Program Evaluation and the Interpretation of Outcomes

Pretest and posttest assessments were administered before and after the core training. Their implementation provided a means of examining participants' performance across the training period. However, the numerical scores and scoring details are not included in the documentation currently available for this revision. Consequently, the magnitude of score changes cannot yet be reported.

The qualitative account provides complementary information about implementation, including teacher feedback, collaborative translation, and participants' engagement with language materials. These sources help explain learning processes, but should not be used to infer a numerical increase that has not been calculated. Likewise, any observed pretest–posttest difference should be interpreted within the limits of an evaluation without a comparison group.

This distinction is consistent with a broader understanding of digital literacy as involving multiple competencies rather than a single measure of application use. Tinmaz et al. (2022) describe digital literacy as a field encompassing interconnected skills and forms of thinking. Accordingly, the evaluation of this program benefits from considering test performance alongside participants' explanations, translation revisions, and documented learning practices.

7. Sustainability and Implications for Pesantren Learning

The program documentation identifies continued teacher involvement, collaborative learning, and the use of existing pesantren resources as important considerations for sustainability. These elements provide a practical basis for follow-up activities because they connect translation practice with relationships and routines already present in the institution. The proposed translation community and continued use of learning materials should be reported according to their documented status. An agreed plan represents an outcome of collaborative planning, whereas an operating community requires evidence of membership, activities, or subsequent meetings. Maintaining this distinction makes the program's contribution clearer and allows future evaluation to examine whether the planned activities were sustained.

The findings point to a practical implication: digital translation training in pesantren requires attention to language, context, and participation alongside tool operation. Teachers contribute linguistic and subject expertise, santri contribute their developing knowledge and peer interaction, and institutional support provides opportunities for continued practice. The contribution of the program therefore lies in organizing these resources around guided translation activities and establishing a basis for further development. The scope of the present account remains local and descriptive. It documents implementation and reported learning experiences at one pesantren over a six-month period. Stronger conclusions about

learning gains and sustained practice will depend on the presentation of test results, examples of revised translations, and follow-up documentation.

CONCLUSION

The community service program at Al-Junaidiyah Biru Islamic Boarding School provided a collaborative setting for strengthening santri's Arabic literacy through digital translation training and mentoring. The ABCD approach connected participants' foundational Arabic knowledge, teachers' expertise, established learning traditions, and institutional facilities to support program implementation. Guided translation and collaborative revision created opportunities for santri to examine vocabulary, interpret sentence structures, and critically review machine-generated translations. Interactive digital materials served as supporting resources for Arabic language practice.

The documented activities highlight the importance of combining digital tools with contextual interpretation and teacher guidance. Although pretest and posttest assessments were administered, conclusions about the magnitude of learning gains require the corresponding score analysis. Program sustainability depends on continued teacher involvement, regular translation practice, and integration into existing learning communities. Future implementation should strengthen the documentation of translation revisions, assessment outcomes, and follow-up activities to establish clearer evidence of learning and sustained participation.

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